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AUTHOR	Huang, Chien-Chung
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ABSTRACT

Using data from the 1979-98 waves of the National Longitudinal Survey of Youth, this paper investigated the effect of child support enforcement on marital and nonmarital births, noting differences by age and race. The study examined 4,715 women who were followed from 1979 to their first birth or to 1998. Data also came from various years of the State Legislative Summary from the National Conference of State Legislatures and the Office of Child Support Enforcement Legislative Tracking System Report from the U.S. Department of Health and Human Services. Data analysis provided evidence that women who lived in states with effective child support enforcement, measured by both strict child support legislation and high child support expenditure, were more likely to have marital births and less likely to have nonmarital births. The findings suggest that the deterrence effect of child support enforcement on men dominated the opposite effect on women. The impact of child support enforcement differed by racial and age groups. For African American women, effective child support enforcement had a strong effect on decreasing nonmarital births, but not for increasing marital births. The impact went the opposite way for white and/or post-teenage women. (Contains 61 references.) (SM)

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The Impact of Child Support Enforcement on Nonmarital and Marital Births: Does It Differ by Racial and Age Groups?

Chien-Chung Huang *
Rutgers University School of Social Work

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The Impact of Child Support Enforcement on Nonmarital and Marital Births: Does It Differ by Racial and Age Groups?

Abstract

Using the 1979 through 1998 waves of the National Longitudinal Survey of Young Women (NLSY), this paper provides evidence that women who lived in states with effective child support enforcement, measured by both strict child support legislation and high child support expenditure, were more likely to have marital births and less likely to have nonmarital births. The findings suggest that the deterrence effect of child support enforcement on men dominates the opposite effect on women. In addition, the impact of child support enforcement differed by racial and age groups. For black women, effective child support enforcement had a strong effect of decreasing nonmarital births, but not of increasing marital births. The impact, however, went the opposite way for white and/or post-teenage women.

The Impact of Child Support Enforcement on Nonmarital and Marital Births: Does It Differ by Racial and Age Groups?

I. Introduction

The proportion of nonmarital births in the United States has increased dramatically over the past three decades. In the mid 1960s, when Daniel Patrick Moynihan (1965) warned that marital instability and father absence were undermining the progress of black Americans, the nonmarital birth ratio – the ratio of births to unmarried mothers over total births – was approximately 23% for black Americans and 8% for the country as a whole. In 1998, the figures were 69% and 33% respectively (U.S. Department of Health and Human Services, 2000). Empirical studies provide clear evidence that nonmarital births not only have negative effects on child development but also reduce the potential for the success of mothers, as well as fathers (Maynard, 1996; McLanahan, 1998).

In response to these changes, policy makers and social scientists have become increasingly concerned about the causes of nonmarital births and the extent to which government policies may have fostered their increase. Despite empirical evidence to the contrary (Garfinkel and McLanahan, 1986; Moffitt 1992, 1998, and 2001), many people have come to believe that increases in welfare benefits are a major cause of increases in nonmarital births (Murray, 1984, 1993). State and federal legislators, in turn, passed legislation in the late 1980's and first half of the 1990's designed to reduce welfare eligibility and increase the costs of single motherhood. Included here are policies that lower AFDC benefits and limit eligibility (time limits, family cap), as well as policies that impose work requirements on welfare recipients. This trend culminated in the

Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996, which replaced Aid to Families with Dependent Children (AFDC) by Temporary Assistance for Needy Families (TANF), eliminated the entitlement to welfare, substantially tightened work requirements, and limited total lifetime eligibility to 5 years.

What is missing from much of the recent debate is a full recognition of men's role in nonmarital and marital births and a discussion of how government policies might affect men's behavior. In particular, there has been little notice paid to how the government's inability to establish paternity and to collect child support from absent fathers may have contributed to men's failure to take responsibility for contraception. Although child support enforcement have intensified during the past decade, and although these policies are part of the 1996 welfare reform, they are generally viewed as ways of reducing welfare costs rather than as strategies for preventing nonmarital births.

The lack of studies on men's role is a potentially serious omission, given that decisions about sexual intercourse, contraception, and marriage involve two adults rather than one. Moreover, policies designed to increase the costs of single motherhood for women run the risk of harming children who are already born. In contrast, policies aimed at making unmarried fatherhood more costly for men have the potential not only to prevent nonmarital births but also to benefit children who are already born. The purpose of this paper is, thus, to answer the question of whether stronger child support enforcement is associated with lower rates of nonmarital births and/or higher rates of marital births, and whether these effects would be larger for certain age and/or racial/ethnic groups. Given that public attention has been particularly focussed on the nonmarital birth rates of nonwhite teenage girls and that previous studies have indicated

that the factors affecting nonmarital and marital births may vary by age (teenage and post-teenage women) and race/ethnicity (white, black, and Hispanic), it is important to examine whether policies to tighten child support legislation and/or to raise child support expenditure would have an effect on the nonmarital birth rates of women in different racial/ethnic and/or age groups. If this is the case, we must also ask how large these effects are and what direction they take.

II. Impact of Child Support Enforcement on Nonmarital and Marital Births

Although it is reasonable to assume that both mother and father will take on the financial responsibility of raising a child, this has often not been the case for nonmarital births. In particular, before 1975 financial responsibility for nonmarital births rested primarily with the mother and the government. Mothers who met the income test were eligible for public assistance. In contrast, unwed fathers were more or less free to shirk their parental obligations, and most did so (Garfinkel, 1992; Beller and Graham, 1993). Since 1975, the federal government has taken a number of steps to prevent absent fathers from abandoning their children financially (For a review of this history, see Garfinkel, Meyer, and McLanahan, 1998; Lerman and Sorenson, 2000). The effort includes the Child Support Enforcement (CSE) Program, created by Congress in 1975, which established state offices of CSE and authorized Federal matching funds to states for helping locate absent parents, establish paternity, establish child support orders, and obtain child support payments. From 1981 through 1999 (with the exception of 1983, 1985, and 1991), Congress further passed new laws every year to strengthen child support. Among them, the 1984, 1988, and 1996 bills were the most important.

Specifically, the 1984 Child Support Amendments required states to develop legislative guidelines to be used in determining child support awards and to withhold child support obligations from the paychecks of delinquent fathers. The Family Support Act of 1988 mandated states to adopt presumptive guidelines for child support awards and to initiate automatic withholding from fathers' paychecks, regardless of delinquency. The act also included a number of provisions aimed at strengthening paternity establishment for children born to unmarried parents, including a requirement that states use genetic tests in cases where paternity is in dispute. The PRWORA of 1996 reinforced paternity establishment by streamlining the legal processes for establishment, requiring states to adopt in-hospital voluntary paternity establishment programs, and providing mandatory genetic testing in contested cases. It also strengthened income withholding by reducing the time for employers to remit withheld wages to 7 business days and allowing issuance of electronic withholding orders by State agencies without notice to obligors. The collection system is changing from one where payment is often discretionary to one where payment is compelled and automatic. As a result of the legislation, both federal and state governments have devoted considerable resources to strengthen child support enforcement. The expenditure of both state and federal governments spent on child support enforcement increased more than ten times, from $312 million in 1978 to $3,584 million in 1998 (U.S. House of Representatives, 2000).

Since the implementation of this child support legislation and methods of enforcement, what we have observed so far is an increase in the paternity establishment rates (number of cases of paternity establishment divided by number of nonmarital births in a given year) from 20% in the early 1980s to over 55% in 1996 (Nichols-Casebolt and

Garfinkel, 1991; Garfinkel, Huang, McLanahan, and Gaylin, forthcoming), and a growth in the proportion of never-married mothers with a child support award from 12% to over 20% during the same period (Beller and Graham, 1993; Freeman and Waldfogel, 2001). Numerous studies have also examined the effects of child support policies on payments (Garfinkel and Robins, 1994; Garfinkel, Miller, and McLanahan, 1998; Argys, Peters, and Waldman, 2001; Freeman and Waldfogel, 2001) and on welfare dynamics and child well-being (Graham, Beller and Hernandez 1994; McLanahan, Seltzer, Hanson, and Thomson 1994; Knox 1996; Huang, Garfinkel, and Waldfogel, 2000; Huang, Kunz, and Garfinkel, 2000). In general, these studies have found a strong effect of child support enforcement on increasing absent-parent's payments, but a modest (although sometimes strong) effect of child support enforcement on reducing welfare caseloads and/or improving child's well-being. Although empirical research on the effects of child support enforcement on absent fathers is limited, a few researchers have studied the association between child support payments and father-child contact (Seltzer, Schaeffer, and Charng, 1989; Veum, 1993; Seltzer, McLanahan, and Hanson, 1998), and the effects of child support on fathers' remarriage (Bloom, Conrad, and Miller, 1998).

Although little is known about the effects of child support policies on nonmarital births or on women's and men's behaviors as of today, it has been assumed that changes in child support legislation and enforcement are likely to increase the costs of children for men. According to economic theory, this should make men more reluctant to have children outside marriage and/or make them more willing to have children within marriage (Becker, 1991: Weiss and Willis, 1985; Willis, 1999). On the other hand, stronger child support enforcement may reduce the costs of children for women (making

them more willing to have children outside marriage), though the size of the effect is likely to be small. Before 1996, a mother on welfare could keep only the first $50 of child support each month. If the father paid more than $50, the welfare benefits were reduced accordingly. The 1996 PRWORA gave states the option to eliminate the $50 pass-through to mothers on welfare for whom child support is being collected. To date, most states have taken up this option and no longer pass on a share of the payments to the mother. The cost of children may actually increase if a mother is getting informal child support from the father and if she loses that support as a result of stricter child support enforcement. In sum, the deterrence effect on males is expected to dominate.

Despite the policy implications of child support for men's behavior, as of today, only six papers on child support have paid particular attention to men's roles in non-marital and/or marital births, and only one specifically examined the association of child support with men's behavior directly. In a study examining men's behavior directly, Sonenstein, Pleck and Ku (1994) found that a substantial proportion of adolescent males who were aware of paternity establishment would modify their sexual behavior and contraceptive use accordingly, especially if their peers were doing so. The implication of this study is important in that it indicates the potential impact of child support on young men's behavior and thus on the incidence of nonmarital births. Although not directly examining men's behavior, Nixon (1997) investigated the association between child support and marital disruption and found that states with stricter child support enforcement regimes had lower rates of marital disruption where the divorced wife would rely on welfare. The theoretical effects of child support enforcement on divorce, like those on nonmarital child bearing, are, however, ambiguous because the incentives go in

the opposite direction for mothers and fathers. Nixon's findings suggest that the male effect will dominate amongst couples where the divorced wife would rely on welfare; that is, tougher child support enforcement would increase the costs for the non-custodial parents (usually the fathers) if he chose divorce. The implication of her results is similar to the hypothesis in this paper: increasing the costs of children for absent fathers is likely to lower the incidence of nonmarital births and/or increase the probability of marital births.

The other four studies focus more on the impact of child support on nonmarital births. Utilizing aggregate data on states over time, Case (1998) examined the effects of child support legislation on nonmarital births and found that states with legislation that allowed genetic testing to establish paternity, permitted paternity establishment up to age 18, and adopted presumptive guidelines for setting child support award were more likely to have low nonmarital birth rates. Later, three papers extended Case's work by examining the effects of child support enforcement practices on nonmarital births and found that states with effective child support enforcement practice (as measured by high paternity establishment rates and child support collection amounts per AFDC cases) are more likely to deter nonmarital births (Plotnick, Garfinkel, Gaylin, McLanahan, and Ku, 2000; Garfinkel, Huang, McLanahan, and Gaylin, forthcoming; Plotnick, Ku, and Garfinkel, 2001).

A common difficulty experienced by most of the above studies is that not all of the legislation or practice variables for which they controlled had significant effects on nonmarital births. This may partly be due to the difficulty of measuring the effect of individual law and/or practice and the ambiguity of correct specification, because child

support payments are a multiplicative function of the probability of having a legal obligation, the level of that obligation, and the probability of paying the full obligation. Moreover, it is very likely that more than one law affects each step of the enforcement process. For instance, the probability of securing a child support obligation depends on a number of laws, such as: 1) admitting, and more recently requiring, blood and genetic tests in disputed cases, 2) allowing paternity to be established any time before the child's 18th birthday, and 3) requiring that paternity must be established for the father's name to go on the birth certificate. Furthermore, it might be the case that effective enforcement is more important in achieving the desired goals than any individual piece of legislation. In other words, good laws that are not effectively enforced may have little effect. Freeman and Waldfogel (2001) show that even in a state with strict child support legislation, the beneficial effect of the legislation would not be observed unless strong and effective enforcement is implemented. Such enforcement requires both strong laws and high expenditures. The major limitation of these prior studies is that none have addressed the importance of the interaction between child support legislation and child support enforcement. Failing to examine this interaction effect obscures the true effects of child support policies on nonmarital birth outcomes. This study would particularly extend this line of research to include not only child support enforcement practice variables (e.g., child support expenditures) but also child support enforcement policy variables (e.g., child support legislation).

III. Data and Analysis Techniques

Data

The main data come from the 1979 through 1998 waves of the National Longitudinal Survey of Youth (NLSY). The NLSY consists of annual interviews begun in 1979 with a nationally representative sample of women between the ages of 14 and 22. Information gathered from sample members includes their marital and fertility histories, allowing users to accurately identify marital and non-marital births, and detailed individual, family, and neighborhood characteristics that are associated with fertility decisions. The sample initially consisted of never-married women without a child at 1979. Each subject's marital and fertility history is followed until she has her first birth or until the last wave of survey, 1998. Given numerous empirical studies have demonstrated that first birth is an important contributing factor to a woman's later births (e.g., number and type of births – marital or non-marital) and later achievement (please see, for example, Maynard, 1997), this paper particularly focuses on the first birth in hope to shed some lights in the factors determining a woman's first birth.

Both state child support legislation and expenditure are used to represent the vigor with which a given state approaches child support enforcement. As mentioned above, effective child support enforcement depends on a combination of laws rather than individual pieces of legislation; therefore, a legislative index is created to measure state child support legislative vigor. This legislative index covers steps of child support enforcement: securing a child support obligation and collecting child support payments. Specifically, the index includes six forms of child support legislation: genetic tests, paternity establishment to age 18, wage withholding under delinquency, immediate wage withholding for new cases, universal wage withholding, and state income tax intercept.

The index ranges from 0 for states with no law to 6 for states with all six laws[1]. Genetic testing permits the father's genetic test results to be used to establish paternity, and paternity establishment to age 18 allows for the establishment of paternity throughout the child's minority. Wage withholding under delinquency indicates that the state has developed a system similar to income tax withholding that allows child support obligations and any arrearages accrued to be deducted from the obligor's paycheck. Immediate withholding laws requiring all new or modified support orders for welfare recipients to have immediate withholding of support. This was to be extended to all cases irrespective of welfare status through universal withholding laws. Finally, state income tax intercept indicates that the state has procedures available to garnish state income tax refunds up to the amount of overdue child support. The information on such legislation is collected mainly from various years of the State Legislative Summary from the National Conference of State Legislatures (NCSL-SLS) and OCSE Legislative Tracking System Report (OCSE-LTSR) from the U. S. Department of Health and Human Services. The inconsistencies between NCSL and OCSE-LTSR were resolved by examining each state's existing laws in the Library of Congress. It is important to note that a one-year lag between legislative enactment and implementation is assumed. Appendix 1 lists the year of child support legislation being enacted. The amount of child support expenditures of each state is calculated from the expenditures reported in the OCSE annual report to Congress divided by the number of single-mother families in that state collected from various years of March Current Population Survey (CPS).

In addition to the importance of child support, a number of state welfare policy

[1] The author also experimented with the index that allows individual child support law carries unequal

and economic conditions are included in the models[2]. Previous empirical studies have shown that generous welfare benefits limited to single mothers might undermine marriage and promote nonmarital births, both by making single motherhood more affordable and by reducing the gains from marriage (Murray, 1993; Fossett and Kiecolt, 1993; Lundberg and Plotnick, 1995; Rosenzweig, 1999). On the other hand, poor employment opportunities for men and/or good employment opportunities for women undermine marriage by making males less attractive and by making females more independent. In general, both welfare benefits and economic opportunities might discourage marriage and thereby promote nonmarital births (William, 1987; Mare and Winship, 1991; Lichter, LeClere, and McLaughlin, 1991; South and Lloyd, 1992; Schultz, 1994; McLanahan and Casper, 1995; Moffitt, 2001). The maximum AFDC (or TANF after 1996) amount is used to measure welfare generosity. Economic environment is measured by the 10th percentile wages for women and men in a given state, calculated from the 1979-98 March CPS.[3]

Given previous research findings on fertility decisions (Bumpass and McLanahan, 1989; An, Haveman, and Wolfe, 1993; Hoffman, Foster, and Furstenberg, 1993; Maynard, 1995; Moore, 1995; Coley and Chase-Lansdale, 1998; Beller and Powers, 2000), individual, family, and neighborhood characteristics are also controlled for in the analyses. These characteristics include age, education, race, religion, mother's education,

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weights. The effect of this child support legislative index, however, is not significantly different from the one reported here.

[2] Presumably state family planning initiatives and attitude toward nonmarital births are closely related to child support enforcement. As a practical matter, the effects of these variables could not be estimated in this paper because a time series of data on these variables that would cover the complete time period I am interested in this paper is not readily available. The percentage of families headed by single mothers in the neighborhood is used as a proxy for these variables.

[3] Women's and men's median wages have also been tested, the results are similar to what is presented here.

family structure, and the percentage of families headed by single mothers in the neighborhood[4]. These variables are able to capture the differences in resources and choices available to the individual which are associated with the fertility outcome. All models are also analyzed separately by racial/ethnic and age group, given that prior research has found that the estimated effects differ across groups (see, for instance, Hoffman and Foster, 1999; Horvath-Rose and Peters, 2000; Plotnick et al., 2000).

Analysis Techniques

A woman is assumed to make a fertility decision among alternatives based on her individual, family, and neighborhood characteristics, as well as her state environment. The possible alternatives include 1) having a marital birth; 2) having a non-marital birth; or 3) no birth. The model specification can be represented by the following equation:

$$P_{ijt} = \beta D_i + \gamma X_{it-1} + \alpha_s + \delta_t + \varepsilon_{it}$$

where P_{ijt} is the probability of individual i observed in alternative j at time t; D is the variables assumed to be constant over time for individual i; X is the variables assumed to be varied over time for individual i and is measured at time t-1; α_s is the state-fixed effect, constant across individuals resident in the same state, and δ_t is the year-fixed effect, constant across individuals in the same year; β and γ are regression coefficients, and ε_{it} is an unobserved random error component. Note that with state and year effects, the only way in which a state-level variable such as child support enforcement can influence the dependent variable is through its changes within a state over time. Variables

[4] The author also estimated regression models in which family income, mother's welfare experience, and residence area were also controlled for, as well as models in which family structure was not controlled for. The results did not differ from those presented here.

that are largely constant over time within states or affect all states in a given year, such as the Earned Income Tax Credit (EITC), will be subsumed within the state and year fixed effect.

The variables assumed to be constant over time include individual and family background as reported in the survey year of 1979 such as respondent's race, number of siblings, mother's education, family structure when respondent at age 14, and the religion in which the respondent was raised. The variables which can vary over time include respondent's age, educational attainment, percent of families with female head in neighborhood, state ratio of women and men's 10^{th} percentile wage, state maximum AFDC benefits, and state child support policies. Multinomial logit is used to estimate the net effects of independent variables on birth outcomes in which the birth outcomes (no birth vs. nonmarital birth vs. marital birth) is regressed on a set of controls for individual, family, and neighborhood characteristics that have been found to be important influences on an individual's fertility decision in prior research. Specifically, the model includes controls for the woman's age, education (years of schooling at 1979 and any additional years she gained between 1979 and the survey year), race/ethnicity, her mother's education, the type of family in which she lived when she was 14 (stepparent, father-only, or mother-only family), the number of siblings she had when she was 14, the religion in which she was raised, the percentage of families headed by females in the neighborhood she lived in over time, women's and men's 10^{th} percentile wages over time, and the maximum AFDC benefits over time. This model is consistent with that used by previous studies to reconcile the results here with previous findings. Child support legislation index and child support expenditure were later included in the models

to test the hypothesis that child support is associated with lower rates of nonmarital birth. Then an interaction model was estimated to answer the question of whether an individual child support legislation index or child support expenditure alone is good enough to lower the nonmarital birth outcomes, or whether a strict child support law index combined with high child support expenditure (as the measure for child support enforcement) has a stronger impact of lowering the numbers of nonmarital birth outcomes. All of the models are estimated for all samples as well as for individual racial/ethnic and age groups.

IV. Results

Descriptive Results

As noted above, the sample initially consisted of women who were never-married and had never had a birth in 1979, and each woman's marital and fertility history is followed until she had her first birth or until the end of the last survey in 1998. Table 1 presents descriptive statistics of the sample, weighted by 1979 sampling weight. The first panel of Table 1 displays the mean values of the sample at initial year of 1979, and the second panel shows the mean values of time-varying covariates.

Overall, the sample was relatively young in 1979; the mean age was 17, and it ranged from 14 to 22. The mean years of schooling was about 10 years. The majority of the sample was non-Hispanic white (85%), and came from intact families (78%). Comparatively, about 11% lived in mother-only families when they were 14 and about another 8% were from stepparent families. The mean year of mother's education was 12, and they have on average 3 siblings. About one-third of the sample was raised Catholic,

another one-quarter Baptist.[5] In 1979, these women were, on average, living in a neighborhood that had about 10% of families with female heads (ranging from 3.5 to 21.6), the 10th percentile wages for women and men were $5.5 and $7.3 respectively (in 1997 constant dollars), the maximum AFDC benefit for a welfare family with four persons was about $766 (in 1997 constant dollars) per month, and the states had generally weak child support enforcement with 0.5 child support law index and $162 expenditure per single-mother family.

Comparing the time-varying values to the values in 1979, this paper observes that the neighborhood and state environments in which they lived show substantial changes. More families became headed by females over this period, with the percentage increasing to about 14 on average, but with a huge variation of 8.1. Yet at the same time, the maximum AFDC benefits decreased to $631 per month. Both women and men's 10th percentile wages decreased over time, although women's wages had a less steep slope. At the same time, states had more strict child support enforcement with an average of 2.6 child support law index and $214 expenditure per single-mother family on average. These descriptive statistics suggest that as years passed, women lived in a society characterized by more single motherhood, more stringent welfare policies, and more and stricter child support enforcement.

Birth Outcomes

Table 2 presents the weighted birth outcomes of the sample. In general, thirteen percent of the sample had a nonmarital birth, and another 60% of them had a marital birth

[5] The author recognizes that there is tremendous diversity between different religions, however, due to data

over the survey years of 1979-98. However, substantial differences are observed among different age and racial/ethnic groups. Women who were younger than 20 had 6% of nonmarital births, but 10% of women aged 20 or older had nonmarital births[6]. On the other hand, women who were 20 or older were more likely to have marital births than were those younger than 20, the percentages being 61% and 7%, respectively. If we look at the birth outcomes separately by racial/ethnic groups, we find that black women had the highest percentage of nonmarital birth (46%), followed by women of other races (28%). This statistic is fairly consistent with previous findings. In regards to marital birth, white women were more likely to have a marital birth (65%) than were black women and women of other races. The fact that there are such sharp differences in birth outcomes between older and younger women and between members of minority groups and those reporting as white non-Hispanic reinforces the importance of examining the birth outcomes separately by age and racial/ethnic groups. These differences are explored later in the paper by conducting the analyses separately by age and racial/ethnic group.

The Determinants of Birth Outcomes

Table 3 presents the coefficients and robust standard errors of the determinants of birth outcomes, estimated by multinomial logit regression. Robust standard errors are used to take into account the fact that all women occur in the sample more than once. Without this correction, the standard errors would be underestimated. Table 3 basically

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limitations, analyses were not able to distinguish between Catholic and Jewish or between Catholic and Buddhism.

[6] The population of women who were 20 or older also included women who never had a birth before age 20.

replicates the model used in previous research, and therefore state child support enforcement is not included.

Three comparison groups were presented in Table 3 in which the first two columns used "no birth" outcome as the comparison group, while the third column compares nonmarital birth with marital birth outcome. Looking first at the use of "no birth" as the comparison group, the factors that increase the likelihood of women choosing nonmarital birth over no birth are being a minority (black or other races), living in mother-only or other type of family at age 14, and living in a neighborhood where a higher percentage of families were headed by females over time. However, being raised in a religious family at age 14, having more years of schooling at age 14 and any additional years of schooling afterwards, and higher men's 10^{th} percentile wage over time are estimated to decrease the likelihood of women choosing nonmarital birth over no birth. On the contrary, being black, living in a mother-only family at age 14, or living in a neighborhood with a higher percentage of families headed by females significantly decrease the likelihood of women choosing marital birth over no birth, while being raised in a religious family at age 14 and having more years of schooling at age 14 have positive effects on women choosing marital birth over no birth. The observed positive effect of additional years of age on choosing nonmarital or marital birth over no birth is reasonable given that women are more likely to have children as they age.

Given that factors that are positively (negatively) associated with choosing nonmarital birth over no birth often are negatively (positively) associated with choosing marital birth over no birth, it is interesting to compare nonmarital birth with marital birth in order to understand what factors are more important in increasing a woman's

likelihood of choosing marital birth or decreasing her likelihood of choosing nonmarital birth when a woman decides to have a child. The results in column 3 indicate that being a minority (black or other races), living in a mother-only family at age 14, and residing in a neighborhood with a higher percentage of families headed by females are estimated to have strong positive effects on women choosing nonmarital birth over marital birth. The effect of welfare benefits is in the expected direction, but is only marginally significant at 15 percent level. In contrast, having a mother with a higher educational attainment, being raised in a religious family at age 14, being older, having more years of schooling, and living in a state with higher men's 10^{th} percentile wage are estimated to have significant negative effects on the likelihood of women choosing nonmarital birth over marital birth. If we transform the estimated coefficients into odds ratios, we find that relative to non-Hispanic white women, the odds of choosing nonmarital birth over marital birth are 9.5 times higher for women who are black, and 2.3 times higher for women of other races. Relative to women living in intact families at age 14, the odds of choosing nonmarital birth as against marital birth are 1.6 times higher for women living in mother-only families at age 14. However, women raised in a religious family at age 14 are 34% less likely to choose nonmarital birth as against marital birth. Similarly, a one-dollar increase in men's 10^{th} percentile wage could decrease the probability of a woman choosing nonmarital birth over marital birth by 31%.

These results suggest the importance of not only individual's and family's socioeconomic characteristics for a woman's fertility decision, but also the impact of the neighborhood and economic environment. When there are more families headed by females in the neighborhood, single motherhood becomes a not deviant norm for girls

and thus choosing nonmarital birth is not a difficult decision anymore. When the economy is good and thus more men are working and earning more, it reduces the chance of women having nonmarital birth probably partly due to the greater affordability of marriage for men. Welfare benefits have only a marginal effect on women's fertility outcome; although in opposition to what some have argued (Murray, 1984, 1993), this result is more in line with other scholars' findings (Garfinkel, Huang, McLanahan, and Gaylin, forthcoming; Moffitt, 1992, 1998).

The regression results for different age and racial/ethnic groups are listed in Appendix 2[7]. While being a minority and living in a mother-only family at age 14 have strong positive effects on the likelihood of choosing nonmarital birth over marital birth for both women younger than 20 and those 20 or older, the percentage of families headed by females in the neighborhood only matters for women who were 20 or older. Some other differences between women who were younger than 20 and who were 20 or older are observed. Specifically, it is interesting to find that living in a stepparent family at age 14 reduced the likelihood of choosing nonmarital birth over marital birth for women younger than 20. For women who were 20 or older, coming from a religious family, having more years of schooling, and living in a good economic environment helped reduce the likelihood of choosing nonmarital birth over marital birth. These results suggest that young women (<20) might be more likely to be affected by family structure variables, and women who were 20 or older are more likely to be influenced by family practice (religion) and societal environment. If we transform the results into odds ratios, we see that for women younger than 20, the probability of choosing nonmarital birth over

marital birth is 15 times higher if the woman is black and 1.9 time higher if living in a mother-only family at age 14, while the probabilities are 9 times higher and 1.4 times higher, respectively, for women who were 20 or older.

The factors that contribute to the increasing likelihood of choosing nonmarital birth against marital birth for white women are living in a mother-only or other type family at age 14 and the presence of a higher percentage of families headed by females in the neighborhood. On the contrary, being raised in a religious family at age 14 or having more years of schooling help white women reduce their likelihood of choosing nonmarital birth against marital birth. Interestingly, living in a stepparent family at age 14, as well as having more years of schooling, help black women reduce their likelihood of choosing nonmarital birth over marital birth. The presence of a higher percentage of families headed by females increased the likelihood of choosing nonmarital birth over marital birth for black women. The results for family structure are particularly interesting, given that a recent study found that being part of a non-traditional family (e.g., single-motherhood, stepparent or adoptive family) has more harmful effects on white teenagers as seen in emotional or behavioral problem or difficulties at school, but not so much on black teenagers (Nelson, Clark, and Acs, 2001). Here, we observe that living in a non-traditional family (mother-only or other type of family) seems to increase the likelihood of a white woman choosing nonmarital birth over marital birth, while it has little effect on a black woman's birth outcome.

Does Child Support Enforcement Decrease Nonmarital Births?

[7] A separate regression model was not estimated for women of other races due to the small case number.

The results presented so far paint quite a consistent picture with previous research on the nonmarital birth outcome. To answer the research question regarding the importance of child support enforcement in determining women's birth outcomes while holding everything else constant, Table 4 adds in state child support enforcement as measured by child support law index and child support expenditure per single-mother family in each state. Two models are presented. The top panel of Table 4 displays the results of controlling for child support law index and child support expenditure in addition to the variables controlled for in Table 3, and the bottom panel adds in the interaction variable of state child support law index with expenditure. Controlling for child support variables did not significantly change the effects of individual, family, neighborhood, and state environment characteristics on women's birth outcomes, although the effects of welfare benefits decrease in magnitude and are no longer significant at 15 percent level.

As seen in the top panel of Table 4, both state child support law index and expenditure are in the expected direction; that is, women who lived in states with more child support legislation or higher child support expenditure were less likely to have nonmarital births as against marital births, although the effects are only marginally significant at 10 percent level. Transforming the results into odds ratios, we can expect that women living in a state with additional child support legislation would be 4% less likely to choose nonmarital birth against marital birth, and women living in a state that spent an additional $100 per woman on child support enforcement would be 17% less likely to have a nonmarital birth. After controlling for the interaction of the child support

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N=215.

law index with child support expenditure as shown in the bottom panel of Table 4, the result indicates that strong child support legislation combined with high child support expenditure strongly reduce the likelihood of women choosing nonmarital birth over marital birth. This result reinforces what previous research has found -- effective child support enforcement requires both strong laws and high expenditures (Freeman and Waldfogel, 2001).

Do the Effects of Child Support Enforcement Vary by Age or Racial/ethnic Groups?

The analyses have thus far established that strong child support enforcement reduces the likelihood of a woman choosing a nonmarital birth as her first fertility outcome. To provide further information in order to establish an effective policy, it is important to ask whether or not child support polices would be equivalently important for each age or racial/ethnic group, and if not, which group is most likely to be affected in what way. Table 5 replicates the models in Table 4 but analyzes the sample separately by age and racial/ethnic groups. For simplicity, only the models having controls for the interaction of the child support law index with child support expenditure are presented.

Examining the results across age groups first, although the magnitude of the interaction of the child support law index with child support expenditure are similar for both women who were younger than 20 and those who were 20 or older, the effect only achieves a significant level for women in the 20 or older age group. Two possible explanations exist. First, although we could observe negative effects of the child support interaction variable on young women choosing nonmarital birth over marital birth, the sample is not large enough to measure precisely; secondly, due to the sample design of

NLSY, most women who were younger than 20 only appear from years 1979 to 1985, a time when the states' child support policies were scarce and weak. Thus the effect of child support policies could not be measured precisely. However, these results for women younger than 20 are intriguing and warrant further research with larger sample sizes.

With regards to the differences across racial/ethnic groups, the results in Table 5 indicate that a strong child support law index and high child support expenditure not only reduces the probability of choosing nonmarital birth against no birth but also reduces the probability of choosing nonmarital birth over martial birth, although these effects only apply to black women. Comparatively, a strong child support law index and high child support expenditure could significantly increase the probability of choosing marital birth over no birth for white women. The results seem to suggest that strong child support policies would have different influences on white and black women. Strong child support legislation combined with high child support expenditure would bring white women toward marital birth, while discouraging black women from choosing nonmarital birth. The policy implication of these results is interesting and warrants further research.

Simulating the Effects of Child Support Enforcement

To make the results somewhat more readily interpretable, some simulations were conducted, in which regression results from Tables 4 and 5 were used to predict women's nonmarital and marital birth outcomes. These simulation results, shown in Table 6, answer the question of how women would fare if they experienced different forms of

child support enforcement, and how the results would change if they were in different age or racial/ethnic groups.

The first panel of Table 6 presents the observed percentages of nonmarital and marital birthrates for the full sample and for separate age and racial/ethnic groups. The second panel shows the predicted percentages if both child support legislation and expenditure had not improved over time, or had remained fixed at 1979 levels[8]. The results indicate that, if both child support legislation and expenditure had not improved over time, the nonmarital and marital birthrates would be 14.1% and 56.1%, rather than 12.7% and 60.2%, respectively. That is, the improvement of child support enforcement leads to a decline of nonmarital births by 10% and to an increase of marital births by 7%. Likewise, the improvement of child support enforcement is expected to lower nonmarital birthrates for women who were 20 or older, white women, and black women by 17.4%, 3.8%, and 13.4% and to increase marital birthrates by 7.4%, 6.9%, and 3.8% respectively. It is worth noting that the total birthrates (marital plus nonmarital birthrates) would be lower slightly for most women if child support enforcement fixed at 1979, except for black women. The birthrates would be about 69% if child support enforcement had not improved over time, but the observed birthrates are about 72% for white women and women who were 20 or older (the birthrates were 82% and 74% respectively for black women). These findings suggest that the improvement in child support enforcement increases the likelihood of having a birth for some women who originally plan to have no birth, by about 3 percentages. The effect, however, is limited to the first birth which is the dependent variable of this paper. Garfinkel, Huang,

[8] Women who were younger than 20 were not simulated in this case due to small sample size.

McLanahan, and Gaylin (forthcoming), using aggregate birthrates data of women age between 15 and 44, found that strong child support enforcement decreases total birthrates for women, including marital and nonmarital birthrates.

V. Discussion/Conclusion

This paper investigated the effects of child support enforcement on women's birth outcomes, using data from the 1979-1998 National Longitudinal Survey of Youth on 4,715 women who were followed from 1979 to their first birth or to 1998 if they did not have any birth during this period. The results in this paper indicate the strong effect of child support enforcement, measured by strict child support legislation and high child support expenditure, on women's first birth outcomes, even after controlling for a range of individual, family, neighborhood, and state characteristics that affect women's fertility outcomes. In general, although more strict child support legislation alone or high child support expenditure alone would not have a strong influence on women's birth outcomes, states with a combination of the two would substantially reduce the probability of women choosing nonmarital birth.

The effects of child support enforcement are stronger for some women than for others. Specifically, women who were 20 or older are more likely to reduce their probability of choosing nonmarital birth if they live in a state with strong child support enforcement, while there is no significant effect for women younger than 20. This latter result may be due to the fact that enforcing child support on teenage women and young men is less likely to be successful, but it may also be due to the research design of NLSY, which limited the teenage sample over 1979-1985, a period during which most states had

scarce child support legislation and weak child support enforcement. Thus, further analyses of these issues with larger and recent samples of women younger than 20 would be warranted.

The results in different racial/ethnic groups indicate that more strict child support legislation and high child support expenditure would reduce black women's probability of choosing nonmarital birth, while it might increase white women's probability of choosing marital birth. These findings suggest that strict child support enforcement may have different effects on decisions about sexual intercourse, contraception, and marriage for members of different racial groups. Further analysis on the impact of child support enforcement on women and men's decisions about contraception and thus the outcomes of pregnancy (abortion or birth) for different racial groups may provide the precise mechanism for how child support enforcement affects birth outcomes.

These results have some implications for policy. It is important to note that although most of the public attention to child support enforcement has been with regard to its relationship to welfare caseloads, one implication of this paper is that effective child support enforcement can have a strong impact on women's birth outcomes. This impact is also likely to increase long-term well-being of these potential fathers and mothers of nonmarital births. Empirical studies provide clear evidence that nonmarital births reduce the achievement of mothers and fathers of nonmarital births. The deterrence effect of child support enforcement on nonmarital births prevent men and women becoming fathers and mothers of nonmarital births and therefore increase the potential for their life achievement. A second policy implication has to do with welfare policy. Although public debate emphasizes the contributing effects of welfare benefits in

increasing nonmarital births, their effects on birth outcomes are marginal in this paper. Most importantly, compared to cutting welfare benefits, strengthening child support enforcement generates a more favorable influence because, unlike cutting welfare benefits which reduces the income of children already born, it increases their income.

This paper provides another avenue to recognize the importance of child support enforcement to women's fertility outcomes, possibly through changes in men's behavior (a greater likelihood of using contraceptive methods or more willingness to have a marital birth) and thus to acknowledge that policies that shift the cost of nonmarital births from resident mothers and the public to absent fathers are likely to have a more favorable impact by preventing single motherhood and increasing the economic security of single mothers and their children.

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